What is claimed is:

1. A multivalently interactive molecular assembly comprising:

a plurality of at least one of functional groups and ligands,

wherein a ratio between $R_h$ and $R_g$ which is expressed by $R_h$ /Rg is 1.0 or less, where $R_h$ is a hydrodynamic radius calculated from dynamic light scattering (DLS) assay performed in aqueous solution; and $R_g$ is a radius of gyration determined based on the Zimm plot generated using data obtained by static light scattering (SLS) assay.

2. A multivalently interactive molecular assembly comprising:

a plurality of at least one of functional groups and ligands,

wherein a diffusion constant D calculated from a dynamic light scattering assay performed in aqueous solution increases as scattering vector constant K increases.

3. A multivalently interactive molecular assembly comprising:

a plurality of cyclic molecules;

a linear molecule which is threaded through the cyclic molecules to hold the cyclic molecules together; and

bulky substituents capping both ends of the linear molecule,

wherein at least two of the plurality of cyclic molecules are substituted with at least one of a functional group and a ligand, wherein a ratio $T_2/ T_2'$ ranging from 0.4 to 1 is satisfied between a spin-spin relaxation time $T_2$ measured on the substituent, and, a spin-spin relaxation time $T_2'$ measured on a similarly positioned moiety of a substituent substituted with a cyclic molecule which is not threaded through with the linear molecule.

4. A multivalently interactive molecular assembly according to claim 3, characterized in that the bulky substituents degrade when the multivalently interactive molecular assembly is *in vivo*.

5. A multivalently interactive molecular assembly according to claim 3, wherein the multivalently interactive molecular assembly is a polyrotaxane.

6. A multivalently interactive molecular assembly according to claim 3, wherein the cyclic molecules are cyclodextrin.

7. A multivalently interactive molecular assembly according to claim 3, wherein the functional group contains a caboxyl group at an end thereof.

8. A multivalently interactive molecular assembly according to claim 7, wherein the functional group containing a caboxyl group at an end thereof is a carboxyalkoxycarbonyl group.

9. A multivalently interactive molecular assembly according to claim 3, wherein the cyclic molecules are substituted with a ligand that is a sugar ligand.

10. A multivalently interactive molecular assembly according to claim 3, wherein the cyclic molecules are cyclodextrin molecules, and a peak area of C6 primary hydroxyl group, C2 secondary hydroxyl group and C3 secondary hydroxyl group in at least two of the cyclodextrin molecules are reduced by 10 to 95% than a peak area of the corresponding hydroxyl group in a cyclodextrin with no substituents, as determined by a two-dimensional $^1$H-NMR spectroscopy.

11. A capturing agent comprising:

a multivalently interactive molecular assembly which can capture an object of interest,

wherein the multivalently interactive molecular assembly comprises:

a plurality of cyclic molecules;

a linear molecule which is threaded through the cyclic molecules to hold the cyclic molecules together; and

bulky substituents capping both ends of the linear molecule;

wherein at least two of the plurality of cyclic molecules are substituted with one of a functional group and a ligand,

wherein one of the functional group and the ligand is capable of capturing an object of interest.

12. A drug carrier comprising:

a multivalently interactive molecular assembly,

wherein the multivalently interactive molecular assembly comprises:

a plurality of cyclic molecules;

a linear molecule which is threaded through the cyclic molecules to hold the cyclic molecules together; and

bulky substituents capping both ends of the linear molecule,

wherein at least two of the plurality of cyclic molecules are substituted with one of a functional group and a ligand,

wherein one of the functional group and the ligand is capable of bonding a drug therewith.

13. A calcium chelating agent comprising:

a multivalently interactive molecular assembly,

wherein the multivalently interactive molecular assembly comprises:

a plurality of cyclic molecules;

a linear molecule which is threaded through the cyclic molecules to hold the cyclic molecules together; and

bulky substituents capping both ends of the linear molecule,

wherein at least two of the plurality of cyclic molecules are substituted with a functional group containing caboxyl group at an end thereof,

wherein the functional group is capable of chelating calcium.

14. A drug enhancer comprising:

a multivalently interactive molecular assembly,

wherein the multivalently interactive molecular assembly comprises:

a plurality of cyclic molecules;

a linear molecule which is threaded through the cyclic molecules to hold the cyclic molecules together; and

bulky substituents capping both ends of the linear molecule,

wherein at least two of the plurality of cyclic molecules are substituted with a functional group containing caboxyl group at an end thereof,

wherein the functional group is capable of enhancing efficacy of a drug used therewith.

15. A drug enhancer according to claim14, wherein the at least two of the plurality of cyclic molecules are multivalently interactive molecular assembly substituted with a ligand.

16. Polyrotaxane which can be used in a multivalently interactive molecular assembly,

wherein the multivalently interactive molecular assembly comprises:

a plurality of cyclic molecules;

a linear molecule which threads through the cyclic molecules to hold the cyclic molecules together; and

bulky substituents capping both ends of the linear molecule;

wherein at least two of the plurality of cyclic molecules are substituted with one of functional groups and ligands.